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> Victron Energy Orion 24/12-Volt 70A DC-DC Converter Instruction Manual

## Victron Energy ORI241270020

# Victron Energy Orion 24/12-Volt 70A DC-DC Converter

Model: ORI241270020 - Non-Isolated, High Power

## INTRODUCTION

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This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Victron Energy Orion 24/12-Volt 70 Amp Non-Isolated DC-DC Converter. Please read this manual thoroughly before using the device.



Figure 1: Victron Energy Orion 24/12-Volt 70 Amp DC-DC Converter.

## SAFETY INFORMATION

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- Installation must be performed by qualified personnel in accordance with local electrical codes.
- Ensure all connections are secure and properly insulated to prevent short circuits.
- Always disconnect power before performing any maintenance or installation work.
- The device can become warm during operation; ensure adequate ventilation.
- Do not expose the device to water or excessive moisture.

## PRODUCT OVERVIEW

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The Victron Energy Orion 24/12-Volt 70 Amp DC-DC Converter is designed for high-efficiency voltage conversion, stepping down 24-Volt DC input to a stable 12-Volt DC output. It is suitable for various applications including motor, marine, electronic systems, and off-grid setups.

## Key Features:

- **High Conversion Efficiency:** Up to 92% efficiency ensures minimal power loss.
- **Wide Input Voltage Range:** Accepts 18-Volt to 35-Volt DC input.
- **Stable Output Voltage:** Provides 10-Volt to 15-Volt DC output.
- **Remote On-Off Connector:** Allows for external control, eliminating the need for a high-current switch in the input wiring.
- **Adjustable Output:** Can be used as a battery charger for 12-Volt batteries in a 24-Volt system.
- **Parallel Operation:** Up to five units can be connected in parallel to increase output current.

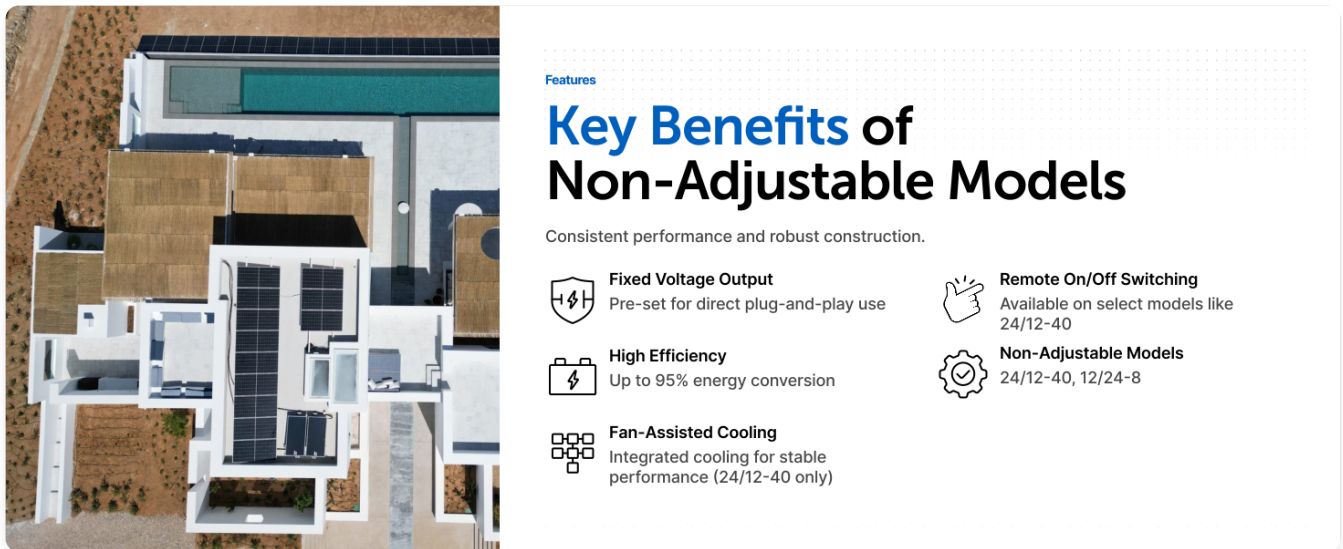


Figure 2: Overview of key features including factory-set voltage, high efficiency, and remote on/off option.

## SETUP AND INSTALLATION

The Orion DC-DC Converter is designed for straightforward installation. Follow these general guidelines:

1. **Mounting:** Securely mount the converter in a well-ventilated area using four screws. Ensure the mounting surface is stable and can support the device's weight.
2. **Wiring:** Connect the 24-Volt DC input (18-35V) from your battery bank to the input terminals. Connect your 12-Volt DC appliances to the output terminals (10-15V). Ensure correct polarity (positive to positive, negative to negative/ground).
3. **Remote On-Off:** If using the remote on-off feature, connect a low-power switch or engine run/stop switch to the designated remote on-off connector. This allows for convenient control without high-current switching.
4. **Fusing:** Install appropriate fuses or circuit breakers on both the input and output lines to protect the converter and connected devices from overcurrent.

# Stable Power, Zero Hassle

Simple, rugged converters designed for consistent DC output with zero fuss.

Orion DC-DC converters High Power non-adjustable models deliver fixed voltage for plug-and-play reliability in vehicles, boats, and equipment. With high efficiency and robust performance, they're ideal when simplicity, stability, and speed of setup are the top priorities.



Figure 3: Side view of the converter with input and output terminals for wiring.

## OPERATING INSTRUCTIONS

Once properly installed, the Victron Energy Orion DC-DC Converter operates automatically to provide stable 12-Volt power from a 24-Volt source.

- **Power On/Off:** If the remote on-off feature is connected, use the external switch to activate or deactivate the converter. Otherwise, the unit will power on when input voltage is present.
- **Load Management:** The converter can supply up to 70 Amps continuously. Monitor your total 12-Volt load to ensure it does not exceed the converter's capacity.
- **Battery Charging:** Models with adjustable output can function as a battery charger. Refer to the detailed product sheet for specific adjustment procedures if using this feature.
- **Parallel Operation:** For higher current requirements, up to five units can be connected in parallel. Consult the wiring diagram for correct parallel connection setup.

Your browser does not support the video tag.

Video 1: This video demonstrates the VictronConnect App for monitoring performance, which can be used with compatible Victron

## MAINTENANCE

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The Victron Energy Orion DC-DC Converter is designed for reliability and requires minimal maintenance. Regular checks can help ensure optimal performance and longevity.

- **Visual Inspection:** Periodically inspect the converter for any signs of damage, loose connections, or overheating.
- **Cleanliness:** Keep the unit clean and free from dust and debris to ensure proper airflow and cooling. Use a dry cloth for cleaning.
- **Ventilation:** Ensure that the area around the converter remains unobstructed to allow for adequate ventilation.
- **Connection Integrity:** Check all electrical connections for tightness, especially after initial installation and during routine maintenance.

## TROUBLESHOOTING

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If you encounter issues with your Victron Energy Orion DC-DC Converter, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No output voltage	No input voltage; remote on-off switch off; blown fuse/breaker	Check input power; activate remote switch; check and replace fuses/reset breakers.
Low output voltage	Overload; poor connections; input voltage too low	Reduce load; check and tighten connections; verify input voltage is within range (18-35V).
Overheating	Insufficient ventilation; excessive load	Ensure proper airflow around the unit; reduce connected load.

If the problem persists after attempting these solutions, contact Victron Energy support or a qualified technician.

## SPECIFICATIONS

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The following table details the technical specifications for the Victron Energy Orion 24/12-Volt 70 Amp DC-DC Converter (Model: ORI241270020).

## Dimensions

# Compact size

Weight:	0.9 kg
Operating temperature:	-20 to +55°C
Easy to mount	4 screws



Figure 4: Physical dimensions of the converter.

Feature	Detail
Model Number	ORI241270020
Input Voltage Range	18 - 35 Volts DC
Output Voltage Range	10 - 15 Volts DC
Output Current (Continuous)	70 Amps
Efficiency	92%
Item Weight	0.95 Kilograms
Dimensions (L x W x H)	7.7 x 3.5 x 2.6 inches (195 x 88 x 65 mm)
Operating Temperature	-20°C to +55°C

Feature	Detail
Remote On-Off	Yes
Number of Outlets	5

## WARRANTY AND SUPPORT

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Victron Energy products are known for their quality and reliability. This product comes with a standard manufacturer's warranty. For specific warranty terms and conditions, please refer to the documentation included with your product or visit the official Victron Energy website.

For technical support, troubleshooting assistance beyond this manual, or warranty claims, please contact Victron Energy customer service or an authorized dealer. You can also utilize the VictronConnect app for monitoring and configuration of compatible devices.

Your browser does not support the video tag.

Video 2: This video provides an overview of the Victron Remote Management (VRM) portal, a tool for monitoring and managing your Victron energy systems remotely.